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Ruijia Li

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EXAMINER

KIM, HEE-YONG

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/583,053	<b>Applicant(s)</b> LI ET AL.	
	<b>Examiner</b> HEE-YONG KIM	<b>Art Unit</b> 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-20 is/are rejected.
- 7) ☒ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/14/2010</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. This office action is in reply to Applicant's Response dated July 14, 2010.
2. **Claims 1, 4-6, 9, and 14-20** have been amended.
3. **Claims 1-20 are pending.**

### *Response to Arguments*

4. Objections to Drawing and Specification are withdrawn because new drawing and specification overcomes the previous objections.
5. Applicant's arguments with respect to the prior art rejection over **claims 1-20** have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 101*

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. **Claims 14-20** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding **claims 14-20**, they recite "computer-readable storage medium or machine-readable storage medium". In the specification, "machine readable medium includes transitory medium such as carrier waves and signals (paragraph 9). Therefore, they are rejected.

Regarding dependent **claims 15-20**,

A). The Examiner notes that the term "machine..." as the courts have defined "... includes every mechanical or combination of mechanical device or combination of devices to perform some function and to produce a certain effect or result." Coming v. Burden, 56 U.S. (15 How.) 252, 267 (1854). However, the Examiner doesn't believe this lends itself to the modern definition of "computers" which are comprised of processors (elements conducting electrical processes representing complex operations), to arrive at desired computerized results. Accordingly, the Examiner suggests that the term "machine" in the claims be replaced with "computer" in order to fully connote the software based embodiment that is desired by these sets of claims, and in accordance with the Interim Guidelines, Annex IV (Section c).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 1-3, 9-10, and 13-15** are rejected as being unpatentable over Kuhn (US 2002/0,157,112) in view of Vetro (US 6,490,320).

Regarding **claim 1**, Kuhn discloses Method and Apparatus for Generating Compact Transcoding Hints Metadata. Kuhn specifically discloses A method (Fig.1 ) Transcoding System) comprising: defining (Description of Region of Interest , Fig.13) a first part of a frame (Region of Interest, paragraph 84 and 85) as containing sensitive

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information (Region or Object or of Interest, paragraph 85), wherein the frame includes the first part (Region of Interest, paragraph 84 and 85) and a second part (Not Region of Interest);

transcoding (Audiovisual Transcoding 106, Fig.1) the first part of the frame at a higher bit rate than the second part of the frame ( higher bit rate for the region of interest, paragraph 85) based on bandwidth available for transmitting the transcoded frame (different bitrate for different bandwidth, paragraph 2).

However Kuhn fails to disclose such that the transcoding further includes:

detecting first network congestion;

in response to the detecting of the first network congestion,

reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame; detecting second network congestion;

in response to the detecting of the second network congestion, reducing the bit rates of the first and second parts of the frame wherein the bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced.

In the analogous field of endeavor, Vetro discloses Adaptable Bitstream Video Delivery System. Vetro specifically discloses detecting a first and second network congestions (report network congestion and available bit rate, col.8, line 9-10), and reducing frame rate (equivalent to *reducing bit rate*) for the background (*the second part, low priority*) while keeping the information (*bit rate*) about the foreground (*first part, high priority*) intact (col.11, line 40-43), in order to convert compressed input bitstream to output bitstream at an available bit rate (col.5, line 60-64).

Therefore, given this teaching, it would have been obvious to modify Kuhn by providing wherein transcoding further comprises: reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, in order to convert compressed input bitstream to a output bitstream at an available bit rate. The Kuhn method, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, discloses all the features of claim 5.

However Kuhn and Vetro still fails to disclose *in response to the detecting of the second network congestion, reducing the bit rates of the first and second parts of the frame wherein the bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced.*

However, it was obvious that in the case of severe network condition, even dropping all the second part (reducing the bit rate of second part) and keeping the rate of the first part is not enough for matching available bandwidth. Therefore, the bit rate of the first part should be reduced in addition to dropping all the second part, in order to adjust bit rate according to further reduced bandwidth due to the second network congestion (severe enough to drop the all second part).

Therefore, given this teaching, it would have been obvious to modify Kuhn and Vetro by specifically providing detecting the second network congestion (severe enough to drop all the second part) in response to the detecting of the second network congestion, dropping all the second part and reducing the first part, in order to adjust bit rate according to further reduced bandwidth due to the second network congestion.

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Evidently, the bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced.

The Kuhn method, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, further incorporating detecting the second network congestion (severe enough to drop all the second part) in response to the detecting of the second network congestion, dropping all the second part and reducing the first part, discloses all the features of claim 1.

Regarding **claim 2**, Kuhn and Vetro disclose everything claimed as applied above (see claim 1). Kuhn further discloses wherein defining a first part of a frame further comprises: defining one or more items of the first part of the frame as containing sensitive information (Region of Interest, paragraph 84 and 85), wherein the item is one of an area and an object (Region or Object or of Interest, paragraph 85).

Regarding **claim 3**, Kuhn and Vetro disclose everything claimed as applied above (see claim 2). In addition, Kuhn discloses further comprising: storing a coordinate of each of the items in a file (Motion trajectory\_D may be used to spatially describe, paragraph 85).

Regarding **claim 9**, the invention is system claim corresponding to the method claim 1. Therefore, it is rejected for the same reason as claim 1.

Regarding **claim 10**, Kuhn and Vetro disclose everything claimed as applied above (see claim 9). In addition, Kuhn discloses further comprising: memory (Audiovisual Transcoding Hints Metadata Buffer 105, Fig.1) to store a

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configuration file (metadata, paragraph 17) including a coordinate (spatially describe, paragraph 85) of an item in the first part of the frame, wherein the item is one of an object and an area (Region or Object or of Interest, paragraph 85).

Regarding **claim 13**, the Kuhn system, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, further incorporating detecting the second network congestion (severe enough to drop all the second part) in response to the detecting of the second network congestion, dropping all the second part and reducing the first part, as applied to claim 9, discloses wherein the sensitive-information generator (Kuhn: Transcoding Hints Generation Unit 104, Fig.1) sends the definition of the first frame (Kuhn: Audiovisual Transcoding Hints Metadata Buffer 105, Fig.1) to the transcoder and receives a status of the bandwidth (Vetro: report network congestion and available bit rate, col.8, line 9-10) from the transcoder.

Regarding **claim 14**, the invention is a computer-readable medium claim corresponding to the method claim 1. Therefore, it is rejected for the same reason as claim 1.

Regarding **claim 15**, the invention is a computer-readable medium claim corresponding to the method claim 2. Therefore, it is rejected for the same reason as claim 2.



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10. **Claims 7, 11-12 and 19** are rejected as being unpatentable over Kuhn in view of Vetro, and further in view of Dunn (US 6,356,664) (hereafter referenced as Dunn).

Regarding **claim 7**, Kuhn and Vetro disclose everything claimed as applied above (see claim 1). However Kuhn and Vetro fail to disclose wherein defining a first part of a frame further comprises: comparing objects in a frame sequence; and defining the first part as containing the objects appearing most frequently in the frame sequence.

In the analogous field of endeavor, Dunn discloses Selective Reduction of Video Data Using Variable Sampling Rates Based on Importance within Image . Dunn specifically discloses assigning different sampling rates to objects for appearing frequencies (higher sampling rates (means higher bit rate) for the speaker, less sampling rates for reporters and audiences, Fig.8, col.8, line 42-60), in order to do selective reduction in rates based on importance weighting (col.2, line 43-46).

Therefore, given this teaching, it would have been obvious to one skilled in the art to modify Kuhn and Vetro by providing wherein defining a first part of a frame further comprises: comparing objects in a frame sequence; and defining the first part as containing the objects appearing most frequently in the frame sequence, in order to do selective reduction in rates based on importance weighting. The Kuhn method, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, further incorporating detecting the second network congestion (severe enough to drop all the second part) in response to the detecting of the second

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network congestion, dropping all the second part and reducing the first part, further incorporating the Dunn selective data reduction based importance weighting of appearing frequencies, has all the features of claim 7.

Regarding **claim 11**, The Kuhn system, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, further incorporating detecting the second network congestion (severe enough to drop all the second part) in response to the detecting of the second network congestion, dropping all the second part and reducing the first part, further incorporating the Dunn selective data reduction based importance weighting of appearing frequencies, as can be applied to claim 7 and 9, discloses memory (Kuhn: Audiovisual Transcoding Hints Metadata Buffer 105, Fig.1) to store a configuration file (Kuhn: metadata, paragraph 17) including a priority (Dunn: weighting, col.8, line 42-60) of an item in the first part of the frame, wherein the item is one of an object and an area (Kuhn: Region or Object or of Interest, paragraph 85).

Regarding **claim 12**, the Kuhn system, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, further incorporating detecting the second network congestion (severe enough to drop all the second part) in response to the detecting of the second network congestion, dropping all the second part and reducing the first part, further incorporating the Dunn selective data reduction based importance weighting of appearing frequencies, as applied to claim 11, discloses file analyzer (Kuhn: Transcoding Hints Generation Unit 104, Fig.1) to convert a format of the

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configuration file (Kuhn: Transcoding Hints DS 1001, Fug.10) into another format (Kuhn: Fig.16. transcoding hints state meta-data, including bit rate and quantizer scale), compatible with the transcoder.

Regarding **claim 19**, the invention is a machine-readable medium claim corresponding to the method claim 7. Therefore, it is rejected for the same reason as claim 7.

11. **Claims 8 and 20** are rejected as being unpatentable over Kuhn in view of Vetro, and further in view of Augenbraum (US 5,493,456) (hereafter referenced as Augenbraum).

Regarding **claim 8**, Kuhn and Vetro discloses everything claimed as applied above (see claim 1). However Kuhn and Vetro fail to disclose wherein defining a first part of a frame further comprises: comparing objects in a frame sequence; and defining the first part as containing the objects appearing in a most central location of the frame sequence.

In the analogous field of endeavor, Augenbraum discloses Method and Apparatus for Increasing the Recoding Time of a Digital Video Tape Recorder. Augenbraum specifically discloses data reduction by quantizing with different scale factors based on priority of the video data (object) being central portion of the picture, in order to generate the reduced bit rate stream needed to support long play mode of digital VTR (col.3, line 65-68).

Therefore, given this teaching, it would have been obvious to one skilled in the art to modify Kuhn and Vetro by providing wherein defining a first part of a frame further comprises: comparing objects in a frame sequence; and defining the first part as containing the objects appearing in a most central location of the frame sequence, in order to generate the reduced bit rate stream needed to support long play mode of digital VTR. The Kuhn method, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, further incorporating detecting the second network congestion (severe enough to drop all the second part) in response to the detecting of the second network congestion, dropping all the second part and reducing the first part, incorporating the Augenbraum data reduction based on the priority of video data being central part of the picture, has all the features of claim 8.

Regarding **claim 20**, the invention is a computer-readable medium claim corresponding to the method claim 8. Therefore, it is rejected for the same reason as claim 8.

### ***Allowable Subject Matter***

12. **Claims 4-6** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim 1 and intervening claim 2 (for claim 4), and of intervening claims 2 and 4 (for claim 5), and intervening claims 2 and 4 and 5 (for claim 16).

Dependent **claims 4** recite "...in response to the detecting of the first network congestion, reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame; detecting second network congestion; in response to the detecting of the second network congestion, reducing the bit rates of the first and second parts of the frame wherein the bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced; in response to the third network congestion, discarding a low priority area of the second portion..." which are features that are not anticipated nor obvious over the art of record. Dependent **claim 5 and 6** are dependent on claim 4, therefore they are allowed for the reason concerning dependent claim 4. Accordingly, if the claims are amended as indicated above, and if rejected claims 1-3, and 7-20 are cancelled, the application would be placed in a condition for allowance.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEE-YONG KIM whose telephone number is (571)270-3669. The examiner can normally be reached on Monday-Thursday, 8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 571-272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/HEE-YONG KIM/

Examiner, Art Unit 2621

/Andy S. Rao/

Primary Examiner, Art Unit 2621

September 8, 2010